XII.—*Contributions to the History of the Hydroida.*

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[Plate XII.]

I. New British Species.

Subordor **THECAPHORA**, Hincks.

Family **Plumulariidæ.**

Genus Plumularia, Lamk. (in part).

Plumularia siliquosa, n. sp. (Pl. XII. figs. 2–6.)

Shoots clustered, simple, not plumous, resembling ordinary pinnæ, but rising directly from the creeping stolon and not borne on an erect stem, regularly jointed, the joints oblique: *hydrothecæ* cup-shaped, rather deep, with an even margin, standing out from the shoot, one on each internode immediately above the joint: *sarcothecæ* three on each internode, bithalamic; one of them, immediately below the calycle, of larger size, curved, projecting, one above the calycle, and one at the upper extremity of the internode immediately below the joint; two in connexion with the calycle, one on each side above, pedunculate, emarginate on one side: *gonothecæ* (female) elongate, truncate at the top, and tapering off below; (male) very small (about $\frac{1}{4}$ the size of the female), ovate, curved inwards, somewhat pointed below.

This very distinct species was obtained on the coast of Guernsey by R. S. Cooper, Esq., of Weymouth, lately resident at St. Peter's Port, who has paid much attention to the marine zoology of the island, and whose stores of information and material have always been freely placed at the service of his brother naturalists. He has kindly supplied me with the specimens on which the above description is founded.

P. siliquosa has only occurred so far in the stemless form; but it is probable that in its perfect condition it exhibits the plumous mode of growth which is characteristic of its tribe. *P. Catharina* is also found occasionally in this humble guise; but more commonly it assumes the true Plumularian habit.

The calycle in the present species exhibits no very distinctive feature, if we except the pair of pedunculate sarcothecæ which are associated with it. These differ from the similar structures on *P. Catharina* in being emarginate on one side, a peculiarity which also occurs in one at least of the species

described by Meneghini. The calycle is not appressed to the shoot, but stands out from it at an angle.

The female capsules are of very large size, either much elongated and rather slender, or of a broader and shorter type (Pl. XII. fig. 6); but in all cases they present a striking contrast to the males. They are developed in the usual position at the base of the calycles.

The *sarcothecæ* exhibit several varieties of form. The hydrothecal pair are pedunculate; the one below the calycle is incurvate and projects from the stem like a bracket; the two above the calycle consist of an elongate, stem-like portion, tapering off to a point below, which supports a minute cup; they are directed upwards parallel to the shoot. These organs supply good diagnostic characters.

Suborder **ATHECATA**, Hincks.

Family **Atractylidæ**.

? Genus Perigonimus, Sars.

? *Perigonimus nutans*, n. sp. (Pl. XII. fig. 1.)

Stems erect, simple, smooth, slightly tapering downwards, not dilated above; *polypite* large, clavate, terminating above in a short proboscis, and borne on a neck-like extension of the cœnosarc, which rises considerably above the polypary, white, with a slight tinge of light yellowish colour; tentacles 8, four erect and four depressed; body of the polypite frequently bent downwards, so as to droop on one side: *gonophores* unknown.

In the absence of the reproductive bodies, this very graceful species can only be referred provisionally to the genus *Perigonimus*. So far as the trophosome is concerned, it is a well-marked form. The very delicate transparent polypary only extends to the base of a neck-like prolongation of the cœnosarc, which enlarges gradually into the club-shaped body of the polypite. This neck-like portion is very flexible; and the polypite commonly droops to one side, assuming a graceful pendent posture. It has no power of retracting itself in any degree within the polypary, which exhibits no trace of a cup-like dilatation above. The endoderm is opaque white, with a slight yellowish tinge, and the ectoderm transparent. The arms are roughened as usual, and arranged in two sets of four, one carried erect and the other everted. There is no wrinkling or annulation of the polypary, which forms a very delicate and filmy

covering. The striking features of the species are the large elevated polypite and the pendent habit.

II. Podocoryne carnea, Sars, and its appendages. (Pl. XII. figs. 7 & 8.)

I have elsewhere noticed* the occurrence on this species of spiral and filamentary appendages similar to those which are found on *Hydractinia echinata*, Fleming, and which were first described by the late Dr. Strethill Wright. In his work on the Tubularian Hydroids, Prof. Allman has suggested a doubt as to the real nature of these appendages. Neither kind, he tells us, was present in any of the specimens that came under his observation; and he adds, "whatever be the nature of the spiral bodies observed by Hincks, they certainly do not possess the constancy which characterizes the spiral appendages of *Hydractinia*; and it is difficult not to regard both the spiral bodies and the tentacular-like filaments observed by Hincks in *Podocoryne* as merely abnormal alterations of the ordinary hydranths" (polypites)†.

First, then, as to the spirals. There can be no doubt about their occurrence on *Podocoryne carnea*, as I have now in my collection a well-developed specimen on which they are present, forming a line along that portion of the basal crust which edges the mouth of the shell supporting the colony. They are usually curled up in two or three coils; they have a white central core, and are rounded off and slightly clavate at the top, which glitters with thread-cells.

Allman seems to think that they are much more frequently wanting than the similar bodies in *Hydractinia*, and regards the inconstancy of their occurrence as a proof of their abnormality. But, according to my experience, the spiral appendages of *Hydractinia* are by no means constant; on the contrary, they are only present, I believe, on very fully matured colonies; and in numerous instances I have failed to find them. This seems to be the case also with *Podocoryne*.

No doubt all these appendages must be regarded as "alterations of the ordinary hydranths;" but I can see no more reason for considering them "abnormal" in *Podocoryne* than in *Hydractinia*. They present the same general appearance and occupy the same position in both; and in both they seem to be developed only on mature colonies.

Secondly, as to the filamentary or tentaculoid appendages:

* 'History of British Hydroid Zoophytes,' i. p. 32.
† 'Gymnoblastic Hydroids,' part ii. p. 350.

these are as definite zooidal forms as the polypites themselves. They occur on the outskirts of the colony, where *they are thickly distributed*, and seem to be very generally present. I have lately had the opportunity, at Torquay, of reexamining them, and have figured them for this paper (Pl. XII. figs. 7 and 8). They consist of an extensile filamentary body, of a somewhat clavate figure at the free extremity, in which, I believe, a number of thread-cells are immersed, and at the base surrounded, as the polypites are, by a tubular extension of the polypary. They are in pretty constant motion, stretching themselves out hither and thither, and are often so much attenuated as to appear like "long and slender threads of gossamer." They certainly do not strike one as in any respect "abnormal."

We have, then, in *Podocoryne* another instance amongst the Hydroida of that curious polymorphism which recalls so forcibly the complex structure of the Siphonophora.

III. Note on Acharadria larynx, T. S. Wright.

Dr. Strethill Wright has given a very brief and insufficient description of this species, though his figure of it is graceful and characteristic. Allman has studied a young polypite, obtained in Mr. Rotch's aquarium, and has embodied some notes upon it in his 'Gymnoblastic Hydroids.' He conjectures that possibly *Acharadria* may be only "the immature state of some already described form of pennaridan Hydroid." No further account of it has been published.

I have obtained it pretty abundantly between tide-marks in the island of Herm, where it was first found, I believe, by Mr. Rotch. It is a well-marked and extremely beautiful species. The polypites are remarkable for the freedom and activity of their movements. They are able to assume a drooping attitude and to sway the body over to considerable distances, and so to command a wide range of the surrounding water. This power is due to the peculiar constitution of the polypary, the upper portion of which is composed of very delicate and filmy material, and offers no resistance to the motion of the polypite. A very considerable tract of the polypary in the adult is thus attenuated; and the result is a freedom and variety of movement which are unknown amongst other members of the tribe.

Allman has referred to this peculiarity, though it seems not to have been so strongly marked in the young polypite which he examined as it is in the adult. The proboscis and the capitate tentacles were also in active movement, while the

aboral tentacles were frequently and energetically clasped together and variously intertwined. The proboscis is opaque white at the top and of a pinkish colour below it.

On a single polypite there were traces of the reproductive bodies; but they were in too rudimentary a condition to allow of any conjecture as to the probable course of development. They were produced at the base of the filiform tentacles, forming a circle within the verticil, and presented much the same appearance as those of *Tubularia* at a similar stage.

IV. Lafoëina tenuis, Sars.

This remarkable Hydroid, which was first noticed by the elder Sars, and afterwards more fully described and figured by his son, is an interesting addition to our fauna. I have obtained it creeping over other zoophytes, which were dredged in Shetland.

I am also inclined to think that it occurs on the Northumberland coast. In a letter from the late Mr. Alder accompanying some specimens of what he believed to be *Cuspidella humilis*, mihi, he writes, "What are the blunt spine-like processes parasitical on the *Cellularia* with *C. humilis*? Have they any connexion with the latter?" I have little doubt that the supposed *Cuspidella* was, in fact, *Lafoëina* (the two bearing the closest resemblance, so far as the calycles are concerned), and that the "spine-like processes" were the curious sarcothecal organs with which the latter is furnished, and which are thickly distributed along its creeping stolon.

I draw attention to the matter in the hope that some of our excellent northern naturalists may be on the look-out for the *Lafoëina*, and may have the opportunity of settling the question as to its geographical range.

EXPLANATION OF PLATE XII.

Fig. 1. *Perigonimus*? *nutans*, n. sp., Hincks, highly magnified.
Fig. 2. *Plumularia siliquosa*, n. sp., Hincks, natural size.
Fig. 3. The same, portion of a shoot bearing two female capsules, magnified.
Fig. 4. The same, a single calycle and male capsule, magnified.
Fig. 5. The same, a single calycle, more highly magnified.
Fig. 6. The same, a female capsule, magnified.
Fig. 7. Tentaculoid appendages of *Podocoryne carnea*, Sars.
Fig. 8. One of the same, more highly magnified.